

ACCESSION NR: AP4012262

afforded by various types of concrete. The reactor considered has a graphite moderator, a reflector, and a concrete external shield. For computation, the known absorption cross sections for fast and intermediate neutrons for the elements present in the concrete were used. It follows from the computations that the cost is minimal for a shield of an ordinary concrete with 2300 kgm/m^3 . For the heavy concrete (4000 kgm/m^3) the cost is minimal when the water content is the smallest, and for a concrete with a higher density the minimum cost is when the water content is at its maximum. "The authors are grateful to A.M. Komarevskiy for interest and practical advice." Orig. art. has: 5 figures and 4 tables.

ASSOCIATION: None

SUBMITTED: 08Aug63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: NS,BC

NR REF SOV: 005

OTHER: 006

Card 2/2

ACCESSION NR: AP4018365

S/0120/64/000/001/0057/0060

AUTHOR: Broder, D. L.; Kham'yanov, L. P.; Al'nikov, V. S.;
Klemy*shev, P. S.

TITLE: Three-rotor mechanical neutron-beam chopper

SOURCE: Pribery* i tekhnika eksperimenta, no. 1, 1964, 57-60

TOPIC TAGS: neutron beam chopper, transit time method, gamma ray
spectrum, gamma ray spectrum measurement, three rotor neutron beam
chopper, slow neutron spectroscopy

ABSTRACT: A three-rotor mechanical neutron-beam chopper is described in
which the phasing and synchronism of rotors rotation are ensured by a rigid
mechanical precision gearing. The chopper is used in the First Atomic Electric-
Power Station for studying radiative-capture sections and neutron-capture
gamma-ray spectra by the transit-time method. Each rotor is driven by a

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separate ESh-24/1 motor, so that the gears transmit no power; they only ensure synchronism. Phase relations are claimed to be constant within 5' for a long-life service. The max rotor speed is 12,000 rpm, which corresponds to a 7-microsec neutron pulse. The resolution is claimed to be as high as 0.5 or one microsec/m. A few examples of chopper use are cited. Orig. art. has: 6 figures.

ASSOCIATION: none

SUBMITTED: 14Feb63

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: NS

NO REF SOV: 003

OTHER: 003

Card 2/2

BRODER, Dmitriy Leonidovich, doktor fiz.-mat. nauk; POPKOV, Konstantin Konstantinovich; RUBANOV, Stanislav Mikhaylovich; GLADKOV, G.A., kand. fiz.-mat. nauk, retsenzent; VESELKIN, A.P., kand. fiz.-mat. nauk, retsenzent; YEGOROV, Yu.A., kand. fiz.-mat. nauk, retsenzent; POLOGIKH, B.G., kand. fiz.-mat. nauk, retsenzent; VLASOVA, Z.V., red.; CHISTYAKOVA, R.K., tekhn. red.

[Biological shielding for ship reactors] Biologicheskaya zashchita sudovykh reaktorov. Leningrad, Izd-vo "Sudostroenie," 1964. 410 p. (MIRA 17:4)

BRODER, D. L.; LASHUK, A. I.; SADOKHIN, I. P.

"Cross-section for Y-quantum yield and excitation of nuclear levels by neutron inelastic scattering."

report submitted for IAEA Intl Nuclear Data Sci Working Group Mtg, Vienna,
9-13 Nov 64.

ACCESSION NR: AP4015556

S/0089/64/016/002/0103/0110

AUTHOR: Broder, D. L.; Kolesov, V. Ye.; Lashuk, A. I.; Sadokhin, I. P.;
Dovbenko, A. G.

TITLE: The cross section of the excitation levels of Mg, Cr sup 52,
Ni sup 58, Ni sup 60 and Nb sup 93 in inelastic neutron scattering

SOURCE: Atomnaya energiya, v. 16, No. 2, 1964, 103-110

TOPIC TAGS: nuclear cross section, nuclear excitation level, inelastic
neutron scattering, Mg, Cr sup 52, Ni sup 58, Ni sup 60, Nb sup 93

ABSTRACT: The measurements of the cross sections were made by studying
the inelastic scattering of monochromatic neutrons obtained from the
reactions $H^3(p,n)He^3$ and $H^2(d,n)He^3$ for energies below and above 3
Mev, respectively, and by measuring the gamma-spectra resulting from
the reactions. Corrections were made for the dead time of the
analyser and for the self absorption. The computation of the cross
sections was based on the work by W. Hauser and H. Feshbach (Phys.

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Rev. 87 (1952) 366) which used the concept of the compound nucleus and of the independence of its decay from the manner of its formation. The cross sections for the different isotopes as functions of neutron energy are given in diagrams. With the exception of Ni^{58} , the agreement is good when the energy levels of the nuclei are known. "The authors are grateful to Sh. S. Nikolayshvili for his interest and to V. V. Bulychev, A. N. Serbinov, V. A. Romanov, and A. P. Klimov for technical help." Orig. art. has: 6 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 15Apr63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: PH

NO REF SOV: 005

OTHER: 008

Card2/2

ACCESSION NR: AT4019041

S/0000/63/000/000/0132/0142

AUTHOR: Broder, D. L.; Lashuk, A. I.; Sadokhin, I. P.; Suvorov, A. P.

TITLE: Selection of a system of excitation functions for the energy levels during inelastic scattering of neutrons by the nuclei of iron, nickel and niobium

SOURCE: Voprosy* fiziki zashchity* reaktorov; sbornik statey (Problems in physics of reactor shielding; collection of articles). Moscow, Gosatomizdat, 1963, 132-142

TOPIC TAGS: neutron, neutron scattering, inelastic neutron scattering, excitation function, Gamma ray spectrum, energy level cross section, iron nucleus, nickel nucleus, niobium nucleus, nuclear reactor, reactor shielding

ABSTRACT: Cross sections of the energy levels produced during the inelastic scattering of neutrons by the nuclei of iron, nickel and niobium were investigated by measuring the spectrum of the γ -rays created by the degradation of the excited states. The neutron sources were the reaction $T^3(p,n) He^3$ obtained in a Van der Graaf generator for the energy range 0.8-2.5 Mev and the reaction $D(d,n) He^3$ in a cascade accelerator for the range 2.5-4.0 Mev. The γ -ray spectrometer consisted of a NaI(Tl) crystal, an FEU-13 photomultiplier and a 128-channel pulse analyzer. Monitoring of the neutron flux was performed with a boron counter and a U^{235} .

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ACCESSION NR: AT4019041

fission chamber. γ -quanta of the following energies were observed from the isotopes Fe^{56} and Fe^{54} : 0.84, 1.02, 1.23, 1.41, 1.81, 2.15 and 2.6 Mev. The plot of the cross sections and excitation levels as a function of neutron energy shows that all the γ -rays were due to inelastic neutron scattering from Fe^{56} except those at 1.41 Mev, which were produced by excitation of the first level in Fe^{54} . Inelastic scattering of neutrons by the nickel isotopes Ni^{58} and Ni^{60} produced γ -quanta with the following energies: 0.86, 1.00, 1.16, 1.33, 1.45, 1.80 and 2.20 Mev. From Nb^{93} , γ -quanta with the following energies were obtained: 0.029, 0.765 and 0.986 Mev. The sources of the various energy levels are discussed. Comparison of these results with those in the literature showed good agreement. "The authors thank V. S. Stavinskiy for evaluating the results, and Ye. V. Shestopalov, V. S. Borisov, V. A. Romanov, G. N. Deryagin and A. P. Klimov for their help in carrying out the experiments." Orig. art. has: 6 figures.

ASSOCIATION: None

SUBMITTED: 14Aug63

DATE ACQ: 27Feb64

ENCL: 00

SUB CODE: NP

NO REF SOV: 009

OTHER: 023

Card 2/2

ACCESSION NR: AT4019032

S/0000/63/000/000/0060/0074

AUTHOR: Broder, D. L.; Kondrashov, A. P.; Kutuzov, A. A.; Naumov, V. A.; Sergeyev, Yu. A.; Turusova, A. V.

TITLE: An experimental justification of multigroup methods for the computation of biological shielding

SOURCE: Voprosy* fiziki zashchity* reaktorov; sbornik statey (Problems in physics of reactor shielding; collection of articles). Moscow, Gosatomizdat, 1963, 60-74

TOPIC TAGS: nuclear reactor, reactor shielding, neutron scattering, removal cross section, biological shielding, neutron, neutron distribution, multigroup method, diffusion approximation

ABSTRACT: The authors note that the computation of biological shielding involves the determination of the space-energy distributions of the neutrons in media containing light and heavy nuclei. A number of methods, based in one way or another on the solution of kinetic equations, have been developed to meet this need. Several of them are briefly examined and criticized. In the present article, two methods of solving the problem are considered: a 10-group and a 7-group method in a diffusion and diffusion-age approximation,

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ACCESSION NR: AT4019032

respectively. The applicability of this kind of approximation for shielding computations is not evident if strong absorption is present. Hydrogen slowing also complicates the use of these methods to a considerable degree. Neutron scattering with non-elastic collisions is isotropic, while the anisotropy of elastic scattering may be corrected by introducing the transport section of the scattering. At lower energies, elastic scattering becomes more isotropic and absorption processes begin to play an important role only in the lower groups. On the basis of this circumstance, an attempt was made to justify experimentally the applicability of the methods of computation discussed in this article to the space-energy distribution of neutrons at any distance from the source. The 7-group method was developed for the purpose of introducing certain corrections and improvements into the calculations of the fast neutron groups. The basic idea resolves itself to the assignment of the spatial distribution of the group of fast neutrons with energy $E > 1.5$ Mev by the semiempirical method of "removal cross sections" with subsequent computation in a diffusion-age approximation. The authors note that it has been demonstrated that the difference in the results of calculation in the age approximation and the exact solution even for water, at such distances from the source as justify an age approach, does not exceed 30%. This fact gives rise to the hope

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that the results of the computations described in this article will be favorable. The refinements described in the paper deal only with the neutrons with energies above 1.5 Mev, since it is these neutrons, as a rule, which determine the spatial distribution of the neutron streams. Both computation methods were applied to the computation of three varieties of shielding, of rather small thickness, both with and without boron. The purpose of the introduction of the boron was to study the problems of the applicability of the diffusion and diffusion-age approximations to the computation of shielding with different neutron absorption in the thermal and superthermal regions. These same varieties were investigated experimentally. According to the original intention, the simplicity of the method was to be expressed in the relatively small number of energy groups. However, the transition from a larger number of groups to a smaller was natural and, for this reason, 7- and 10-group systems of constants were developed. In the first sections of the article, the selection of groups in the 7- and 10-group methods and the neutron spectrum in the 10-group method are considered. Basic equations and group constants for the 10-group method are presented and discussed in a further section, after which the results of the 10-group computations are analyzed. Only after this are the basic equations and group constants of the 7-group method derived. The experimental check of the computations was made with a reactor having a water decelerator. Test conditions are described in the article. The authors

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ACCESSION NR: AT4019032

found that both the 7- as well as the 10-group method and the selected systems of group constants may be used to compute the space-energy distributions in mixtures of iron with water and lead at the thickness considered in the study. These methods yield satisfactory results (within 20%) for boron-containing media; for example, in boron steels. In the present work, a direct experimental confirmation of the greater accuracy of the 7-group method in comparison with the 10-group technique was therefore not obtained. Orig. art. has: 17 formulas and 8 figures.

ASSOCIATION: none

SUBMITTED: 14Aug63

DATE ACQ: 27Feb64

ENCL: 00

SUB CODE: NP

NO REF SOV: 006

OTHER: "005

Card 4/4

45801-65 EWT(m)/EPF(o)E. P (n)-2/ENG(m)/EPR/T/EPA(bb)-2 Pr-4/PS-4/Pu-4
ACCESSION NR AM1042770 BOOK EXPLOITATION

Broder, Dmitriy Leonidovich (Doctor of Physical and Mathematical Sciences);
Popkov, Konstantin Konstantinovich; Rubanov, Stanislav Mikhaylovich

Biological shielding of marine nuclear reactors (Biologicheskaya zashchita sudovykh reaktorov), Leningrad, Izd-vo "Sudostroyeniye", 1964, 410 p. illus., biblio. 1,000 copies printed.

TOPIC TAGS: nuclear engineering, marine nuclear reactor, reactor shielding, radiation biological effect

PURPOSE AND COVERAGE: This book presents the physical principles and design principles of nuclear power installation shielding. The book is intended for engineers concerned with the calculation and design of shielding. It can be useful for students of higher educational institutions.

TABLE OF CONTENTS [abridged]:

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L 45801-65

ACCESSION NR AM1042770

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SUBMITTED: 28Dec63

NO REF SOV: 142

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SUB CODE: NP, FR, LS

OTHER: 129

L 8686-65 EWT(m)/EWA(h) SSD/AFWL MLK

ACCESSION NR: AT4048283

8/0000/64/000/000/0001/0010

AUTHORS: Al'nikov, V. S.; Broder, D. L.; Lashuk, A. I.; Sadokhin, I. P.; Kham'yanov, I. P. B

TITLE: Gamma rays produced by capture and inelastic scattering of neutrons *

SOURCE: Gamma-luchi pri zakhvate i neuprugom rasseyanii neytronov

TOPIC TAGS: neutron capture, neutron scattering, inelastic scattering, gamma emission, gamma cross section, indium, samarium, zirconium, nickel, iron, gamma spectrum, resonance capture

ABSTRACT: The purpose of the experiments was to determine the gamma cross sections and to identify the transitions occurring between the excited levels of the target nuclei. The spectra of the gamma rays from Sm and In were measured with an NaI(Tl) scintillation spectrometer by a time-of-flight technique described elsewhere (D. Broder

Card 1/3 * [no source given]

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ACCESSION NR: AT4048283

et al., PTE, no. 1, 57, 1964). The resolution of the mechanical selector made it possible to distinguish neutron resonances in Sm and In samples up to 10--15 eV energy. The intensities of the individual lines in the low-energy part of the spectrum were determined relative to a 480-keV line measured with a "black" B¹⁰ sample. Data are presented on the gamma ray spectra due to capture by the first resonances of In (0.096 and 0.86 eV) and Sm (1.46 and 3.7 eV). The relative and absolute yields of the low-energy gamma rays are determined and are reconciled with the published data. It is noted that a change takes place in the high-energy part of the spectrum on going from resonance to resonance. The cross section is determined for the production of 0.84-MeV gamma quanta by inelastic scattering of neutrons having energies up to 6.26 MeV from iron. The excitation cross sections of 5 iron levels are calculated up to 4 MeV. The cross section for the production of 0.92-MeV gamma quanta on Zr are determined in the range up to 3.5 MeV. The transitions between the excited levels of Fe⁵⁶ and Ni⁵⁸ are identified and found

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ACCESSION NR: AT4048283

to be primarily cascades via the first excited levels. Most of the results agree with the published data. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF BOV: 004

OTHER: 006

Card 3/3

L 8685-65 AFWL/SSD

ACCESSION NR: AT4048284

S/0000/64/000/000/0001/0018

AUTHORS: Broder, D. L.; Lashuk, A. I.; Sadokhin, I. P. B

TITLE: Cross sections for the gamma yield and for the excitation of the nuclear levels in inelastic scattering of neutrons

SOURCE: Secheniya vy*khoda gamma-kvantov i возбуждениya urovney yader pri neuprugom rasseyanii neytronov *

TOPIC TAGS: gamma cross section, gamma yield, neutron scattering, inelastic scattering, nuclear level excitation

ABSTRACT: Tables are presented of the measured cross sections for the production of gamma quanta in inelastic scattering of neutrons by Mg, Cr⁵², Fe, Ni⁵⁸, Ni⁶⁰, Zr, Nb, and Sb. The results were obtained with the aid of an NaI(Tl) crystal scintillation spectrometer. The energy resolution of the 0.661-MeV gamma line of Cs¹³⁷ in the

Card 1/3 * [no source given]

L 8685-65

ACCESSION NR: AT4048284

spectrometer was about 10%. Monochromatic neutrons were obtained with the aid of the reactions $H^3(p,n)He^3$ and $H^2(d,n)He^3$, in which the neutron energy spread did not exceed ± 30 keV and ± 100 keV, respectively. Decay schemes established by the authors and by others are used to determine the cross sections for the excitation of individual levels of Mg, Cr⁵², Fe⁵⁶, Ni⁵⁸, Ni⁶⁰, Nb, and the total cross sections for inelastic scattering by Mg, Fe, Ni, and Nb. Plots of the results are presented. The results were published by the authors elsewhere (Izv. AN SSSR ser. fiz. v. 25, no. 2, 309, 1961; Atomnaya energiya v. 16, 107, 1964; Teoriya i metody* rascheta yaderny*kh reaktorov [Theory and Design of Nuclear Reactors], M. 1962, p. 254; Voprosy* fiziki zashchity* reaktorov [Problems in Reactor Shielding Physics], M. 1963, p. 132). Orig. art. has: 8 figures and 9 tables.

ASSOCIATION: None

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L 8685-65

ACCESSION NR: AT4048284

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF SOV: 004

OTHER: 000

Card 3/3

SINEV, N.M.; KRASIN, A.K.; BYCHKOV, I.F.; BLOKHIN, O.I.; BRODER, D.L.;
GABRUSEV, V.N.; DUDNIKOV, Yu.V.; ZHIL'TSOV, V.A.; KOPTEV, M.A.;
KOMAROV, A. Ya. [deceased]; KOTOV, A.P.; LANTSOV, M.N.;
LISOCHKIN, G.A.; MERZLIKIN, G.A.; MOROZOV, I.G.; OREKHOV, Yu.I.;
SERGEYEV, Yu.A.; SLYUSAREV, P.N.; USHAKOV, G.N.; FEDOROV, N.V.;
CHERNYY V.Ya.; SHMEL'Y, V.M.

TES-3 small-scale atomic power plant. Atom. energ. 17 no.6:
448 D '64 (MIRA 18:1)

L 58353-65 EWA(h)/EWT(m) DM

ACCESSION NR: AP5012480

UR/0089/65/018/004/0404/0408 23
621.039.538.7 16AUTHORS: Broder, D. L.; Zhilkin, A. S.; Kutuzov, A. A. BTITLE: Spectra of fast neutrons in heavy media and in water

SOURCE: Atomnaya energiya, v. 18, no. 4, 1965, 404-408

TOPIC TAGS: fast neutron, neutron moderator, water moderator, iron moderator, lead moderator, neutron spectrum

ABSTRACT: The main purpose of the investigation was to determine the behavior of the neutron spectrum near the interface between a heavy medium and water, such as occurs in the construction of some biological shields. The authors measured with a scintillation spectrometer the spectra of moderated neutrons in iron, lead and water behind a layer of iron and lead. The neutrons came from monoenergetic sources of 3.4 and 15 MeV energy. The spectrometer used was a stilbene crystal in conjunction with a FEU-13 photomultiplier and an AI-100 pulse-height analyzer. The measurements were made in prisms

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L 58753-65

ACCESSION NR: AP5012480

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of iron and lead measuring 710 x 710 x 600 mm. When measurements were made with water, the iron and lead layers were located between the target of the accelerator and a tank with water. Plots of the spectra in iron, lead, iron and water, and lead and water are presented for the various energies. In the case of iron alone, the spectrum did not agree with earlier calculations, probably because of the oversimplification of the latter. The spectrum of neutrons in lead does agree with earlier calculations. In the case of water-iron and water-lead shields, the spectrum of the neutrons at a considerable distance in the water behind the layer of the lead or the shield differs appreciably from that of the neutrons in pure water at the same distance, being richer in scattered and slow neutrons than in pure water. This is attributed to the softening of the spectrum in the metal and is in good agreement with the evaporation model of inelastic scattering at the neutron energies involved. 'The authors thank V. G. Zolotukhin, B. A. Kalmykov, V. I. Lobanov, M. P. Tarasko, V. Ye. Tyrkich, Ye. V. Shestopalov for help with the work, and L. A. Trykov for a discussion of the results of the work.'

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L 58753-65

ACCESSION NR: AP5012480

Original article has: 6 figures

ASSOCIATION: None

SUBMITTED: 08Jun64

ENGL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 002

Card

3/3

(N) L 11644-66 EWT(m) DIAAP
ACC NR AP6001570 SOURCE CODE: UR/0120/65/000/006/0067/0070

AUTHOR: Broder, D. L.; Panarin, M. V.; Utyuzhnikov, A. N.;
Kham'yanov, L. P.

ORG: none

TITLE: Anticoincidence gamma-ray scintillation spectrometer

SOURCE: Priory i tekhnika eksperimenta, no. 6, 1965, 67-70

TOPIC TAGS: gamma spectrometer, scintillation spectrometer

ABSTRACT: A total absorption gamma ray spectrometer is described. It was equipped with a 50 x 100 mm NaI(Tl) anticoincidence crystal. The central crystal measured with Cs137 had a 10% energy resolution at 662 kev. The gamma-ray spectra from Zn⁶⁵, Na²⁴, and Po + Be sources were measured. The measurements also included the gamma spectrum originated in a Sm¹⁴⁹ sample by the (n, γ) reaction. The spectra were graphically illustrated for the circuits with and without anticoincidence pulses. The spectral line shapes obtained with one-crystal spectrometer were compared with the lines obtained from the anticoincidence spectrometer equipped with the same NaI(Tl) crystals. The spectrometer was designed for measuring spectra of gamma rays resulting from resonance capture of neutrons. The usefulness of this spectrometer for

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UDC: 539.16.07

L 11644-66

ACC NR: AP6001570

analysis of complex spectra at high efficiency was demonstrated. A schematic outline of the spectrometer arrangement and an electronic circuit diagram are included. According to references cited in the paper, the described spectrometer was similar to the gamma-ray spectrometer used by C. O. Bostrom and I. E. Draper. (Rev. Scient. Instrum. 1961, 32, 38 and Nucl. Phys. 1963, 47, 108). Orig. art. has: [22]
4 figures.

SUB CODE: 20 / SUBM DATE: 9Dec64 / ORIG REF: 003 / OTH REF: 004
ATD PRESS: 4175

Cord 2/2

L 27477-66 EWT(1)/T IJP(c)

ACC NR: AT6008420

SOURCE CODE: UR/3158/65/000/021/0001/0012

AUTHOR: Zolotukhin, V. G.; Kutuzov, A. A.; Broder, D. L.; Kham'yanov, L. P.; Yefimenko, B. A.; Shilkin, A. S. 58

ORG: None 34

TITLE: Analysis and generalization of the correlation method of measuring the particle lifetime distribution in a physical system

SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, no. 21, 1965, Analiz i obobshcheniye korrelyatsionnogo metoda izmereniya raspredeleniya vremeni zhizni chastits v fizicheskoy sisteme, 1-12

ABSTRACT: The authors present a complete statistical analysis of the correlation method of measuring the distribution of the lifetime of particles in a linear physical system. The method is reduced to a determination of the mutual correlation function between a pseudorandom signal used to modulate the intensity of the measured particles coming from the source, and the counting rate of the detectors. It is shown that the statistical accuracy of the method depends both on the off-duty factor of the modulating random signal and on the presence of a noise back-

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ACC NR: AT6008420

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ground against which the measurements are made. In particular, it is shown that the conclusions made by T. E. Stern et al. (J. of Nucl. An., p.A/B, 16, 499, 1962) that the use of random (or pseudorandom) excitation can completely reduce the measurement time compared with the classical method (ordinary periodic excitation) is valid only when there is an appreciable background. When there is no background, on the average the statistical accuracy of the classical and correlation methods is approximately the same. A new method of pseudorandom modulation of the particle source is proposed, to take advantage of this fact. If the modulation is made coherent with the background noise, then it can be readily shown that the fast component of the background can be readily eliminated in the same manner as in the classical method, and the slow component can be eliminated by suitable choice of the off-duty factor of the modulating signal. This type of statistical modulation prevents loss of the peak value of the modulated intensity and thus permits the use of the peak power of the source and retain the favorable advantages of the correlation method. Orig. art. has: 6 figures and 13 formulas.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 002

Card 2/2 ALG

BRODER, D.L.; KLENOV, V.I.; LASHUK, A.I.; SADOXHIN, I.P.

Angular distribution of γ -quanta engendered in inelastic neutron scattering on iron. IAd. fiz. 2 no.5:823-825 N '65.

(MIRA 18:12)

L 28358-66 EWT(m)

ACC NR: AP6001694

SOURCE CODE: UR/0089/65/019/005/0444/0445

AUTHOR: Broder, D. L.; Kondrashov, A. P.; Kudryavtseva, A. V. 29
B

ORG: None

TITLE: Some methods for reducing penetrating secondary gamma fluxes

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 444-445 19

TOPIC TAGS: gamma flux, secondary emission

ABSTRACT: An abbreviated version of the original paper is presented. It was mentioned that experimental devices simulating the nuclear reactor cores and shields were used for studying secondary gamma radiations. The experimental model was made of either mixed layers composed of steel and hydrogenous materials or of monolithic blocks. In order to reduce secondary gamma fluxes, it was recommended that neutron absorbing agents (boron carbides, etc.) be added to thermal shielding and a similar absorbing layer be interposed between the vessel and hydrogenous shielding. The capture gamma radiation can also be diminished by a lead layer adjoining the vessel. The investigations showed that the lead (60 mm thick), boron carbide and boron steel (containing 2 to 3 pct of boron) are good materials for diminishing the capture gamma-ray yield. It was 2

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UDC: 539.121.73:539.122

L 28358-66

ACC NR: AP6001694

also proven that the gamma-attenuation coefficient decreased with the increase of shielding thickness up to four free-path lengths. The factor changed very little with further increase in thickness.

SUB CODE: 20 / SUBM DATE: 26Oct64 / ORIG REF: 000 / OTH REF: 000

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L 0506/01 SWI (R)/EWP(t)/ETI IJP(c) JD/JG/JR/GD
 ACC NR: AT6027935 SOURCE CODE: UR/0000/66/000/000/0184/0190

AUTHOR: Broder, D. L.; Dergachev, N. P.; Kondrashov, A. P.; Zhiritskiy, V. K.;
 Kozlov, V. N.; Lavdanskiy, P. A. 53
 1371

ORG: None 19 6 27

TITLE: Investigation of the shielding properties of concrete which contains boron

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding);
 sbornik statey, no. 2. Moscow, Atomizdat, 1966, 184-190 18

TOPIC TAGS: concrete, boron, radiation shielding, fast neutron, gamma radiation,
 radiative capture

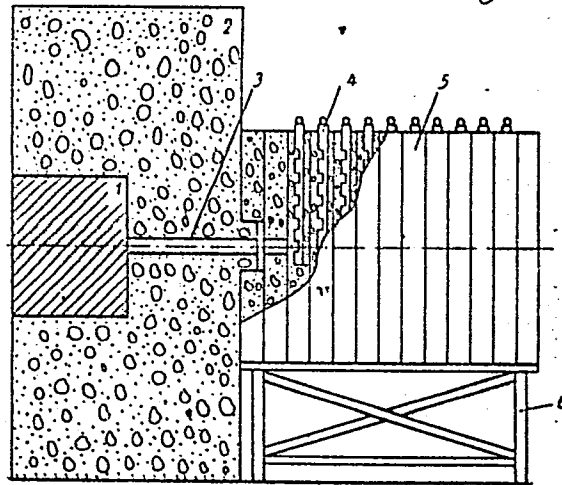
ABSTRACT: The authors study the shielding properties of concrete containing various
 concentrations of boron and various quantities of hydrogen. A beam of fast neutrons
 issuing from a horizontal channel in the shielding of the BR-5 reactor was used in
 these experiments with the arrangement shown in the figure. The diameter of the beam
 was 40 mm with a neutron density of 10^9 neutr/cm².sec. The particle detector was a
 fission chamber with Th²³² and indicators made of red phosphorous. The effective
 threshold of this chamber is close to 1.5 Mev. Indium indicators were used for attenu-
 ated streams of thermal and intermediate neutrons. The concrete specimens were made up
 of 13 plates on a special stand with overall dimensions of 1000x1000x1300 mm. The
 first plate in this assembly was made with a recess to fit flush against the reactor

Card 1/3

L 05067-67

ACC NR: AT6027935

shielding and reduce neutron leakage. The detectors were placed in each plate in special vertical channels measuring 50 mm in diameter with a depth of 600 mm. Seven types of concrete were tested with various concentrations of boron and water. The chemical compositions and boron-water concentrations of the various types are tabulated together with their densities. The neutron flux was measured at various heights in the experimental channels. The resultant data are used for calculating the relaxation length for fast, thermal and intermediate neutrons in 70-85 cm of concrete. The experimental relaxation lengths for fast neutrons agree satisfactorily with the theoretical data calculated on the basis of the removal cross section method. The shielding



properties of concrete with respect to fast neutrons improve as the water concentration in the concrete is increased from 8 to 24 wt.%. An increase in the boron concentration of the concrete results in a considerable reduction in the intensities of thermal and intermediate neutrons and consequently in the production of capture γ -radiation. The

Card 2/3

L 05067-67

ACC NR: AT6027935

boron concentration should not be increased past 3-4 wt.% since this results in a noticeable reduction in the shielding properties of the concrete. Orig. art. has: 6 figures, 3 tables.

SUB CODE: 18, 11/ SUBM DATE: 12Jan66/ ORIG REF: 004/ OTH REF: 002

Card 3/3 *pla*

L 05011-67	EWI(m)/EWP(t)/ETI	IJP(c)	JD/WW/JG/JR/GD
ACC NR: AT6027925	SOURCE CODE: UR/0000/66/000/000/0104/0116		
AUTHOR: <u>Broder, D. L.</u> ; <u>Zhilkin, A. S.</u> ; <u>Zolotukhin, V. G.</u> ; <u>Tarasko, M. Z.</u> ; <u>Kutuzov, A. A.</u>			
ORG: None			
TITLE: Fast neutron spectra in metal-water <u>shielding</u>			
SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor <u>shielding</u>); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 104-116			
TOPIC TAGS: fast neutron, radiation shielding, neutron spectrum			
ABSTRACT: The authors study the spectra of neutrons in the energy range above 1 mev from sources with energies of 3.35 and 14.9 mev in water and in water behind layers of <u>iron</u> and <u>lead</u> . A scintillation spectrometer with a stilbene crystal was used for the measurements. The sensitivity to γ -quanta was reduced by time division of irradiation. The reactions used for the neutron sources were $D(d,n)He^3$ and $T(d,n)He^4$ produced by using deuterons to bombard <u>zirconium-tritium</u> and <u>zirconium-deuterium</u> targets with a thickness of 18 mg/cm ² . For the measurements in water, the source was located in a paraffin block placed in direct contact to the water tank. The overall dimensions of the shielding were 710x710x600 mm. The scintillation spectrometer was combined with an FEU-13 photomultiplier and an AI-100-1 amplitude analyzer. The results show that			
Card 1/2			

L 05041-67

ACC NR: AT6027925

the neutron spectrum from a monochromatic source in lead and iron differs considerably from that in water. The iron and lead spectrum shows a stronger concentration of low-energy neutrons (< 2 Mev). In the energy range from 2 Mev to the initial energy of the 3.35 Mev source and from 4-5 Mev to the initial energy of the 14.9 Mev source, the spectrum in water contains more neutrons than that in iron and lead. This form of spectrum explains the excellent shielding properties of iron and lead for fast neutrons as well as their poor characteristics for comparatively low-energy neutrons. These data also explain the excellent shielding properties of metal-water shielding throughout the entire energy spectrum. Spectra for neutrons in the energy region below the initial energy in water behind layers of lead and iron approach the shape of spectra in water at a thickness of greater than 20 cm. For thinner water layers, particularly below 2-3 Mev, the spectrum shows high concentrations of neutrons in comparison with the spectrum in water. In this transition region there is also a considerable difference from the spectrum in pure water for the energy range from 2 Mev to the initial energy. Orig. art. has: 10 figures, 1 table, 2 formulas.

SUB CODE:2018/ SUBM DATE: 12Jan66/ ORIG REF: 004/ OTH REF: 004

Card 2/2 *pls*

L 05046-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JR/GD
 ACC NR: AT6027924 SOURCE CODE: UR/0000/66/000/000/0088/0103
 AUTHOR: Broder, D. L.; Zhilkin, A. S.; Kutuzov, A. A.; Suvorov, A. P. 43
 ORG: None 8+1
 TITLE: Spectra of fast neutrons in heavy homogeneous media 19
 SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 88-103 19
 TOPIC TAGS: fast neutron, neutron energy distribution, radiation shielding, neutron scattering 21 21
 ABSTRACT: The spectra of fast neutrons in iron and lead are measured directly and the asymptotic spectra are calculated in the P_4 -th approximation of the method of spherical harmonics using recent measurements for the excitation functions on individual levels in iron and lead. Approximate account is taken of neutron moderation in elastic scattering, and anisotropy due to direct interaction in inelastic scattering. Experimental measurements of the spatial energy distributions of neutrons were done on iron and lead specimens measuring 710x710x600 mm. Two reactions were used as neutron sources: $T(d,n)He^4$ (14.9 mev) and $D(d,n)He^3$ (3.35 mev). Since the deuterium target had a thickness of 20 mg/cm², the resultant neutron spectrum in the latter case is not monochromatic. This fact was taken into consideration in the calculations. The neutron spectro-

Card 1/2

L 05046-67

ACC NR: AT6027924

meter was a stilbene crystal combined with an FEU-13 photomultiplier and a 100-channel amplitude analyzer. The theoretical and experimental spectra for iron and lead are compared and show generally satisfactory agreement. Orig. art. has: 9 figures, 1 table, 32 formulas.

SUB CODE: 18.20/ SUBM DATE: 12Jan66/ ORIG REF: 011/ OTH REF: 010

Card 2/2 *ala*

00000001-07 EWP(M)/EWP(E)/ETI JD

ACC NR: AP6034098

(A)

SOURCE CODE: UR/0089/66/021/004/0293/0293

AUTHOR: Broder, D. L.; Dubrovskiy, V. B.; Lavdanskiy, P. A.; Pospelov, V. P.;
Solov'yev, V. N.

32

ORG: none

B

TITLE: Shielding property of heat resistant chromite and magnesite concretes

15

SOURCE: Atomnaya energiya, v. 21, no. 4, 1966, 293

TOPIC TAGS: nuclear shielding, nuclear reactor shield, neutron shielding, concrete

ABSTRACT: A comparative experimental study was made of the shielding property of ordinary concrete and of chromite-and magnesite-base concretes. Experiments were carried out in a VVR-Ts reactor of the Karpov Physicochemical Institute. The experimental relaxation distance data for gamma-radiation showed that heat-resistant chromite and magnesite concretes, even dehydrated, were good shielding materials and may be recommended for use in the thermal shield of the reactors at 800—1700C. Orig. art. has: 1 table.

16

SUB CODE: 11, 18/ SUBM DATE: 12May66/ ORIG REF: 001/ ATD PRESS: 5101

Card 1/1

UDC: 621.039.538.7

ACC NR: AM6023941

Monograph

UR/

Broder, D. L.; Zaytsev, L. N.; Komochkov, M. M. Mal'kov, V. V.;
Sychev, B. S.

Concrete in the shielding of nuclear installations (Beton v zashchite
yadernykh ustanovok) Moscow, Atomizdat, 1966. 239 p. illus.,
biblio., tables. 2050 copies printed.

TOPIC TAGS: accelerator, concrete, nuclear engineering, nuclear
radiation, radiation shielding, reactor shielding

PURPOSE AND COVERAGE: This book is intended for designers of nuclear
devices and readers working in the nuclear industry. Methods and
techniques for swift evaluation of various nuclear shieldings are
presented. Approximate methods of calculating concrete shieldings
are covered in the following sequence: the determination of emitted
radiation and its distribution, of the distribution of radiation
fluxes along the thickness of the shield, and of the permissible
radiation levels beyond the shield. Particular attention is given
to the shieldings of high-power accelerators. Prof. A. N. Komarovskiy
and Docent V. B. Dubrovskiy provided advice, and A. V. Kudryavtseva,
A. M. Tugolukov, V. S. Kiselev, and P. A. Lavdanskii cooperated.

Card 1/2

UDC: 621.039.538

ACC NR: AM6023941

TABLE OF CONTENTS [abridged]:

- Ch. 1. General Information on Biological Shields for Nuclear Installations -- 5
- Ch. 2. Reactors and Accelerators as Radiation Sources -- 31
- Ch. 3. Calculation of the Attenuation of Medium-Energy Neutron and Gamma-Quantum Fluxes in Shieldings -- 74
- Ch. 4. Calculation of Attenuation of Radiation from High-Energy Particle Accelerators -- 100
- Ch. 5. Penetration of Neutrons Through Concretes -- 122
- Ch. 6. Gamma-Radiation Penetration Through Concretes and Formation in Concretes -- 162
- Ch. 7. Radiation Heating of Concrete Shieldings -- 180
- Ch. 8. Some Problems in Optimal-Shield Selection -- 211
- Appendices -- 229

SUB CODE: 18// SUBM DATE: 16Feb66/ ORIG REF: 108/ OTH REF: 116

L 24211-65 EWT(m)/EPP(o)/EPP(n)-2/EPR Pr-4/Ps-4/Pu-4 DM

ACCESSION NR: AP5001266

S/0089/64/017/006/0448/0452

AUTHOR: Sinev, N. M.; Krasin, A. K.; Bychkov, I. F.; Blokhin, O. I.; Broder, D. L.; Gabrusev, V. N.; Dudnikov, Yu. V.; Zhil'tsov, V. A.; Koptev, M. A.; Kotov, A. P.; Lantsov, M. N.; Lisochkin, G. A.; Merzlikin, G. A.; Morozov, I. G.; Komarov, A. Ya. (deceased); Orekhov, Yu. I.; Sergeyev, Yu. A.; Slyusarev, P. N.; Ushakov, G. N.; Fedorov, N. V.; Chernyy, V. Ya.; Shmelev, V. M. 42 B

TITLE: Small-size atomic electric power installation TES-3

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 448-452 19

TOPIC TAGS: small atomic power installation, portable atomic power installation, nuclear reactor, electric power generation/TES-3 reactor

ABSTRACT: The paper is a summary of the SSSR report #310 at the Third International Conference on Peaceful Uses of Atomic Energy in Geneva, 1964. It describes a movable small-size atomic electric power installation with the water cooled and moderated TES-3 reactor (under 10,000 kw). It consists of four

Cord1/2

L 24211-65

ACCESSION NR: AP5001268

blocks each of which was assembled at the manufacturing plant, and which are placed on four self-propelled flatcars on caterpillar tracks. No housing is required for the installation; the only local preparation needed is the radiation protection. The results with a demonstration model show a satisfactory agreement between the theoretically expected and actually obtained parameters of the installation. Orig. art. has: 4 figures

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF SOV: 000

OTHER: 000

Card 2/2

SUBJECT: BRÖDER, K.
GDR/Periodical "Wissen und Leben" 25-4-31/34

AUTHOR: Broder, K.

TITLE: Science and Life (Wissen und Leben)

PERIODICAL: Nauka i Zhizn' - April 1957, #4, p 62 (USSR)

ABSTRACT: A critical review of a monthly publication published by the Society for the Advancement of Science in the German Democratic Republic. Its title is "Science and Life" and its purpose is to supply German readers with knowledge about the latest achievements in the field of physics, chemistry, biology, medicine, archeology, and agriculture. Well known scientists and engineers tell the reader in a popular style of their work and experience. Each edition offers the biography of some eminent person. Readers are invited to ask questions which are answered by specialists. Much attention is paid to the achievements of science and technical knowledge in the USSR and its satellites. Detailed descriptions of these countries are given in every edition.

The article contains one illustration.

Card 1/2

TITLE: Science and Life (Wissen und Leben)

25-4-31/34

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 2/2

AUTHOR:

Broder, K.

SOV-25-58-10-18/48

TITLE:

Speeches Made by Participants of the VSKhV (Slovo - uchastnikam VSKhV)

PERIODICAL:

Nauka i zhizn', 1958, Nr 10, pp 33-41 (USSR)

ABSTRACT:

The editorial staff of this journal organized a meeting of scientists and practical workers of the agricultural field, directors of the VSKhV and representatives of the press. The meeting heard the following reports: Boris Nikolayevich Bogdanov, Director of the VSKhV, on the great importance of the All-Union agricultural exhibition; S.G. Skobkin, Chief Methodologist of the VSKhV, on the achievements of Soviet agricultural sciences as represented by the exhibition; S.G. Kolesnev, Academician of VASKhNIL, on problems of economy in the agricultural field; S.I. Zlobin, representative of the kolkhoz imeni Stalin, Irbeyskiy rayon, Krasnoyarsk kray, on the importance of the efficiency of labor for Siberia; F.N. Naumov, Head of the Krasnoshchekovski Rayon Executive Committee, on the complete utilization of Altay soil; M.I. Pulyayev, Director of the Sovkhoz "Rogachik", on the rapid development in cattle raising and the increase of agricultural produce; N.A. Chabanova, of the kolkhoz "Luch",

Card 1/2

Speeches Made by Participants of the VSKhV

SOV-25-58-10-18/48

Moscow Oblast , on her work and training in the kolkhoz;
I.G. Sharabrin, Professor of the Moskovskaya veterinarnaya
akademiya (Moscow Veterinary Academy), on the research work
exhibited by scientists for an increase in agricultural pro-
ductivity; V.A. Shirshov, Candidate of Agricultural Sciences,
Head of the radiobiologicheskaya laboratoriya Vsesoyuznogo
nauchno-issledovatel'skogo instituta kormov imeni V.R. Vil'-
yams (Radiobiological Laboratory of the All-Union Scientific
Research Institute of Fodder imeni V.R. Vil'yams), on isotopes
in agriculture; Ural Sattorov, Head of the kolkhoz "Pobeda"
Uzbek SSR, on the rapid development of cotton growing and cattle
raising; F.Ye. Grushin, Director of the RTS pavilion, on the
mechanization of agriculture; N.G. Chernenko, Head of the
Moscow kolkhoz imeni Makarov on the importance of
mechanization in agriculture. There are 13 photographs and
7 sketches.

1. Agriculture--USSR

Card 2/2

BRODER, K.

In the land of friends ("From Scutari to Butrint" by P. Burlaka.
Reviewed by K. Broder). Nauka i zhizn' 25 no.5:75-76 My '58.
(Albania--Description and travel) (MIRA 11:5)
(Burlaka, P.)

22(2)

SOV/25-59-3-2/46

AUTHOR:

Broder, K.

TITLE:

We Come to the Victory of Communist Labor (My pridem
k pobede kommunisticheskogo truda)

PERIODICAL:

Nauka i zhizn', 1959, Nr 3, pp 2 - 6 (USSR)

ABSTRACT:

The author describes how young workers of the teplo-
vozoremontnyy tsekh depo Moskva-Sortirovochnaya Mos-
kovsko-Ryazanskoy zheleznoy dorogi (Diesel Engine
Repair Workshop of the Moscow Classification Depot
for the Moscow-Ryazan' Railroad Line) became initi-
ators of a new movement - a competition for the
title "Brigade of Communist Labor". All brigades
of the Depot are competing for this title to satis-
fy the requirements of the new Seven-Year Plan by
raising the production level and their own quali-
fications. This competition was discussed in a
meeting of journalists and workers of the Depot.
N.T. Terekhin, Secretary of the Party Committee of
the Depot dealt with the 50-year history of this

Card 1/3

SOV/25-59-3-2/46

We Come to the Victory of Communist Labor

plant. V.M. Sidel'nikov, a member of the first Communist "subbotnik", outlined the development of Communist labor after the Revolution. V. Stanilevich, Head of the Repair Workshop, stressed the importance of a close connection between production and science, recommending the organization of rationalization groups with the participation of workers, students and teachers. In this connection, he mentioned the help offered by the Moskovskiy institut inzhenerov zheleznodorozhnogo transporta (Moscow Institute for Railroad Engineers), the Tsentral'nyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta (Central Scientific Research Institute of Railroad Transportation) and the Vsesoyuznyy zaochnyy institut inzhenerov zheleznodorozhnogo transporta (All-Union Correspondence Courses Institute for Railroad Engineers). G. Bazarnov, mechanic, reported on the possibilities of raising

Card 2/3

SOV/25-59-3-2/46

We Come to the Victory of Communist Labor

the qualification level of members of the Communist Labor Brigade, e.g. by studying in correspondence courses, visiting evening classes and co-operating with workers of the various specialized fields. There are 6 photos and 4 sketches.

Card 3/3

BRODER, K.

"Science and progress "(Wissenschaft und Fortschritt)". Nauka
i zhizn' 28 no.5:42-43 My '61. (MIRA 14:6)
(Germany, East--Periodicals)

BRODER, L.L.; LASHUK, A.I.; SADOKHIN, I.P.

Yield of γ radiation in the nonelastic scattering of neutrons
on antimony nuclei. Izv. AN SSSR. Ser. fiz. 25 no.2:309-312
F '61. (MIRA 14:3)
(Antimony) (Gamma rays) (Neutrons--scattering)

AMILOV, Yu., brigadir stol'yarov; VORONOV, N., rabotnik; BIL'KO, Antonina;
IVANOVA, I., shveya-motorishtka; BYCHKOVA, Ye., brigadir;
ZHIGUNOV, I., udarnik kommunisticheskogo truda, Broshyurovshchitsa
(Moskva)

Program of our life and our bright future. (Part 1 from 1 and 2.
promys. 2 no. 2:2-3 S '62. (A 14:11)

1. Zerkal'naya fabrika No. 2, Moskva (for Amilov). 2. Garderobnaya
fabrika No. 1, Moskva (for Voronov). 3. Shveynaya fabrika
No. 1, Moskva (for Ivanova). 4. Stalinskiy promyshlennyy
kombinat, g. Moshino, M. Oblast' SSR (for Broder).
(Communist Party of the Soviet Union--Congresses)

BRODERZON, B.G.

Resection of the ileocecal angle with part of the ascending colon
in invagination in an infant. Zdrav.Bel. 7 no.8:61-62 Ag '61.
(MIRA 15:2)

1. Iz khirurgicheskogo otdeleniya Kopatkevichskoy rayonnoy bol'nitsy
(glavnyy vrach B.G.Broderzon).
(INTESTINES__INTUSSUSCEPTION) (INTESTINES__SURGERY)

BRODERZON, B. M.

Broderzon, B. M. "On the problem of physiotherapy of reflex paralyses," Trudy Leningr. obl. gosspitalya dlya lecheniya invalidov Otechestv. voyny, Leningrad, 1948, p. 179- 85

SO: U-3850, 16 June 53, (Letopsis 'Zhurnal 'nykh Statey, No. 5, 1949)

BRODERZON, B.M.

"Physical prophylaxis and physical therapy in rickets."

reviewed by B.M. Broderzon

Vop. pediat. i okhr. mat. i det. 20, no.1, 1952

BRODERZON, B.M., professor

"Physical therapy in cardiovascular diseases." V.A.Ivanov.
Reviewed by B.M.Broderzon. Vop.kur.fizioter. i lech.fiz.kul't.
21 no.2:67-70 Ap-Je '56. (MIRA 9:9)
(PHYSICAL THERAPY) (CARDIOVASCULAR SYSTEM--DISEASES)

BRODERZON, B.M., professor

"Physical therapy." A.I. Abrikosov, and others. Reviewed by B.M. Broderzon. Vop.kur.fizioter. i lech.fiz.kul't. 21 no.3:83-86

J1-S '56.

(MIRA 9:10)

(PHYSICAL THERAPY) (ABRIKOSOV, A.I.)

BRODERZON, B.M., professor

"Hydroaeroionization and its therapeutic use" by V.M.Faibushevich.

Reviewed by B.M.Broderzon. Vop.kur.fizioter. i lech.fiz.kul't. 21

no.4:103-105 O-D '56.

(MLRA 9:12)

(ELECTROTHERAPEUTICS) (FAIBUSHEVICH, V.M.)

~~BRODERZON~~, D.N., professor (Leningrad)

Physiotherapy of acute poliomyelitis and its complications.

Mediatrisa no.3:36-43 Mr '57.

(MIRA 10:10)

(PHYSICAL THERAPY) (POLIOMYELITIS)

BRODERZON, B.M.

BRODERZON, B.M. (Leningrad)

Sergei Aleksandrovich Brushtein; his life, work and scientific
views; 1873-1947. Vop.kur.fizioter. i lech.fiz.kul't. 22 no.6:
3-8 N-D '57. (MIRA 11:2)
(BRUSHEIN, SERGEI ALEKSANDROVICH, 1873-1947)

~~BRODERZON, B. M.~~ (Leningrad)

Materials on the history of physical therapy in St. Petersburg.
and Leningrad. Vop.kur.,fizioter. i lech.fiz. kul't. 23 no.5:
450-454 S-O '58 (MIRA 11:11)
(LENINGRAD--PHYSICAL THERAPY)

BRODERZON, B.M., prof.

In memory of Professor E.T. Zal'kindson. Vop. kur. fizioter. i
lech. fiz. kul't. 25 no. 5:477-478 S-0 '60. (MIRA 13:10)
(ZAL'KINDSON, EVGENII TEOFILOVICH, 1899-1944)

BRODERZON, B.M., prof.

"Reflex physical therapy" by A.R. Kirichinski. Reviewed by
B.M. Broderzon. Vop. kur. fizioter. i lech. fiz. kul't. 25
no. 5:461-464 S-0 '60. (MIRA 13:10)
(PHYSICAL THERAPY) (KIRICHINSKII, A.R.)

BRODERZON, B.M., prof.

"Principles of medical massage" by A.F.Verbov. Reviewed by B.M.
Broderzon. Vop. kur., fizioter. i lech. fiz. kul't. 26 no.1:81-83
'61. (MIRA 14:5)

(MESSAGE)

(VERBOV, A.F.)

BRODERZON, B.M., prof.

The periodical "Voprosy Kurortologii, Fizioterapii, i Lechebnoi Fizicheskoi Kul'tury" for 1960. Vop.kur., fizioter. i lech. fiz. kul't. 26 no.3:267-270 My-Je '61. (MIRA 14:7)

1. Zamestitel' predsedatelya Leningradskogo obshchestva fizioterapevtov i kurortologov.

(THERAPEUTICS, PHYSIOLOGICAL--PERIODICALS)

BRODERZON, B.M., prof. (Leningrad)

"Compound treatment of poliomyelitis in children" by S.E.Ganzburg
and others. Reviewed by B.M.Broderzon. Vop. kur., fizioter. i
lech. fiz. kul't. 26 no.4:368-370 J1-Ag '61. (MIRA 15:1)
(POLIOMYELITIS) (GANZBURG, S.E.) (ZABLUDOVSKAYA, Ye.D.)
(KAPELTIN, A.F.) (FREYDIN, Kh.M.)

BRODERZON, B.M., prof.; BYKHOVSKAYA, A.N., kand.med.nauk

F.M.Rotshtein. Vop. kur., fizioter. i lech. fiz. kul't. 26
no.5:479 S-0 '61. (MIRA 14:11)
(ROTSHEIN, FEODOSIIA MIKHAILOVNA, 1880-1960)

BRODERZON, B.M. (Leningrad)

Elimination of ions from the organism by the application of direct current; critical survey. Vop.kur., fizioter. i lech. fiz. kul't. 27 no.1:55-61 '62. (MIRA 15:5)

(ELECTROPHORESIS)

BRODERZON, B.M. (Leningrad)

Materials on the history of the Leningrad Society of Physio-
therapists and Health Resort Specialists. Vop. kur.. fizioter.
i lech. fiz. kul't. 29 no.1:70-73 '64.

It is essential to pay attention (a letter to the editor).

Ibid.:81-82

(MIRA 17:9)

BRODERZON, E.A.; LUKASHIK, N.K.; KOLTUNOVA, V.I.

Effect of thiamine diphosphate on lipid metabolism in diabetes mellitus. Zdrav. Bel. 9 no.7:17-19 J1'63 (MIRA 17:4)

1. Iz kafedry propedevтики vnutrennikh bolezney (zav. - prof. N.I. Shvarts), kafedry biokhimii (zav. - dotsent Yu.M. Ostrovskiy) Grodnenskogo meditsinskogo instituta i laboratorii sinteza kofermentov Vsesoyuznogo nauchno-issledovatel'skogo vitaminного instituta, Moskva.

BRODERZON, E.A.

Myocardial function in patients with diabetes mellitus
according to data of electro- and dynamocardiographic studies.
Probl. endok. i gorm. 11 no.4:30-33 JI-Ag '65.

(MIRA 18:11)

1. Kafedra propedevtsiki vnutrennikh bolezney (zav.- prof.
N.I. Shvarts) Grodnenskogo meditsinskogo instituta.

Bredeschi, I.

The icebreaker Lenin with atomic propulsion. p. 147

REVISTA TRANSPORTURILOR. (Asociatia Stintifica a Inginerilor si
Tehnicienilor din Romania si Ministerul Transporturilor Rutiere,
Navale si Aeriene) Bucuresti. Vol. 6, No. 4, Apr., 1959

Monthly list of East European Accessions (EEAI) LC, ^{UCLP} No. 8, Aug. 1959

Uncl.

BRODESCHI, Iuliu, ing.

Repair of cylinder blocks with epoxy resins. Rev transport II
no.12:532-534 D '64.

MEYERSON, Z.I., inzh.; BRODETSKIY, A.N., inzh.

Adjustment of a desalting system with preconnected H-cation-exchange filters. Teplonenergetika 11 no.10:18-24 O '64.
(MIRA 18:3)

1. Yuzhnoye otdeleniye Gosudarstvennogo tresta po organizatsii i ratsionalizatsii rayonnykh elektrostantsiy i setey i Yaroslavskaya teploelektrotsentral' No.3.

BRODETSKIY, G., starshiy inzhener

Significance of static stability for the safe sailing of tug-boats. Rech.transp. 19 no.9:46-47 S '60. (MIRA 13:9)

1. Dneprovskaya inspeksiya Registra.
(Tugboats)
(Stability of ships)

BRODETSKIY, G., kand. tekhn. nauk; MOLDAVSKIY, I., inzh.

Reconstruction of platform vessels into hatch-type vessels. Rech. transp.
24 no.8:29 '65. (MIRA 18:9)

BRODETSKIY, G.G.; KARPOVA, N.D.

Manufacture of refractories from Arkalyk deposit clays. Ogneupory
29 no.2:53-55 '64. (MIRA 17:1)

1. Chelyabinskiy metallurgicheskiy zavod.

BRODETSKIY, G.G.; LANDE, P.A.; D'YACHKOVA, Z.S.; MIKHAYLOV, Yu.F.

Ladle brick and stop pipes made of dressed Kyshtym kaolin.
Ogneupory 25 no.10:443-448 '60. (MIRA 13:10)

1. Chelyabinskiy metallurgicheskiy zavod (for Brodetskiy, Lande).
2. Vostochnyy institut ogneuporov (for D'yachkova, Mikhaylov).
(Steelworks--Equipment and supplies)
(Kaolin)

BRODETSKIY, G.G.; KARPOVA, N.D.

Decreasing losses of metal during the pouring of steel. Metallurg
10 no.2:19-20 F '65. (MIRA 18:3)

1. Chelyabinskiy metallurgicheskiy zavod.

Brodetskiy, L.V.

AUTHOR: Brodetskiy, L.V., Engineer

130-12-23/24

TITLE: Plant for Production of Slag Wool from Blast-furnace Slags
(Ustanovka dlya polucheniya shlakovoy vaty iz domennykh
shlakov)

PERIODICAL: Metallurg, 1957, No.12, p.36 (USSR).

ABSTRACT: In place of the widely used method of slag-wool production based on the remelting of solidified blast-furnace slag, the Stalino Metallurgical Works has adopted a method based on the direct use of the molten slag. The author briefly describes the plant used rated at 2 tons/hour. This consists essentially of an oil-fired furnace-receptacle with a useful volume of 15 m³. From this, the slag passes into a fore-hearth where it is further heated to 1 200 °C and is then blown with steam. The cost of the plant is said to be seven times cheaper than that of the cupola-based plant, the cost of the high-quality slag wool being 90 roubles per ton. There is 1 figure.

ASSOCIATION: Stalino Metallurgical Works (Stalinskiy metallurgicheskiy zavod)

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BRODETSKIY, L.V., inzh.

Rapid construction of blast furnaces. Biul. TSNIIOHM no.15:1-5 '57.
(Blast furnaces) (MIRA 11:5)

BRODETSKIY, L.V.

AUTHORS: Brodetskiy, L.V., and Pikalov, P.G.

133-1-5/24

TITLE: An Automatic Control of Heating Blast Heating Stoves
(Avtomaticheskoye regulirovaniye nagreva vozdukhon-agrevateley)

PERIODICAL: Stal', 1958, No.1, pp. 21 - 22 (USSR).

ABSTRACT: Schemes for automatic control of heating stoves based on the control of gas supply according to air supply and air supply according to gas supply are discussed. It is concluded that the former method is more rational as it permits utilising the maximum capacity of the blower. There are 3 figures.

ASSOCIATION: Stalino Metallurgical Works (Stalinskymetallurgicheskiy zavod)

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AUTHOR: Brodetskiy, L.V.

SOV/130-58-6-2/20

TITLE: Shock Absorber for Blast-furnace Bell Beams Counter Weight
(Dempfernoye ustroystvo k balansiram konusov domennoy
pechi)

PERIODICAL: Metallurg, 1958, Nr 6, pp 3 - 4 (USSR)

ABSTRACT: Shock absorbers for blast-furnace bell counter-weights protect the system in the event of cable rupture or slackening through explosion between the bells. The author briefly describes the system advantageously adopted at the Stalino Metallurgical Works in 1956. Two shock absorbers were provided for the big and one for the small bell and consisted essentially of an oil-filled cylinder in which a piston with four vents moves (Figure 1). The head of the cylinder carried two valves, 30 and 45 mm. in diameter, which are operated by local variations in oil pressure in such a way as to prevent the piston (and hence the bell counterweight) from moving with excessive speed. There are 2 figures.

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino
Metallurgical Works)

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1. Blast furnaces - Equipment
2. Shock absorbers - Applications

AUTHORS: Nosovitskiy, B.M., Panev, G.A., Brodetskiy, L.V. and Kuzub, A.G. SOV/133-58-11-3/25

TITLE: An Experience in Smelting Ferrosilicon from Krivoy Rog Ores (Opyt vyplavki ferrosilitsiya iz Krivorozhskikh rud)

PERIODICAL: Stal', 1958, Nr 11, pp 969-976 (USSR)

ABSTRACT: An analysis of the results of prolonged operation of blast furnaces on the Stalinsk Works producing ferrosilicon and a comparison of their main operation indices with the corresponding furnaces on the Dzerzhinsk and Zaporozhstal' Works is given. Characteristic features of the furnaces and the operational results obtained, raw materials used are given in Tables 1, 2, 3 and 4, respectively. The operation practice used on the Stalino Works and its influence on the furnace performance and, in particular, the influence of slag composition, the problem of distribution of the gas stream in the stack and the formation of scaffolds are discussed in some detail. Mean monthly indices of the furnace operation for 1951-54 are shown in Figure 1, gas distribution along the throat diameter - Figure 2, formation of

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An Experience in Smelting Ferrosilicon from Krivoy Rog Ores

scaffolds - Figure 3 and some details of its structure - Figure 4, chemical composition of scaffold - Table 5. It is concluded that the smelting of ferrosilicon is characterised by a low-stability furnace driving, development of axial gas streams and on prolonged operation, the formation of ferrous scaffolds (by the formation of successive layers during variation of temperature conditions in the stack). An increase in slag basicity from 1.0 - 1.1 to 1.2 - 1.25 with simultaneous increase in the content of magnesia from 2.2 - 2.5% to 3 - 3.5% improves the desulphurisation of ferrosilicon and pig iron and decreases metal losses on the pig casting machine to 3-4% (instead of 7%). Variations in the alumina content of slag from 8-11% at slag basicities from 1.05 to 1.25 have no noticeable influence on the silicon content in ferrosilicon. In order to obtain ferrosilicon with a high silicon content, normal stock level and blast temperature should be maintained (about 750-800 °C). A comparatively steady furnace driving and a decrease in the formation of scaffolds can be obtained by: a) exclusion from the burden of materials containing iron silicates

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An Experience in Smelting Ferrosilicon from Krivoy Rog Ores

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(open-hearth and welding slag, sinter and some types of iron ores); b) increase in the degree of peripheral working by an appropriate choice of charging system and an increase in the clearance between the large bell and furnace throat; c) periodic transfer of the furnace to the production of basic or foundry iron. There are 4 figures, 5 tables and 7 Soviet references

ASSOCIATIONS: Donetskiy industrial'nyy institut (Donets Industrial Institute) and Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works)

Card 3/3

1ST AND 2ND COVERS																									
COMMON ELEMENTS													PROCESSES AND PROPERTIES INDEX												
<div style="text-align: right;">29</div> <div style="text-align: left;">CR</div> <p>Control of the properties of oak-bark extracts. I. H. Bass and N. B. Brodetski. <i>Kosbrenna-Oburnaya Prom.</i> 18, No. 2, 54-5(1936); <i>Chem. Zentr.</i> 1936, II, 570-1. The method recommended depends upon the measurement of the sedimentation vol. (under defined conditions) of the macroscopically dispersed particles present in the ext. The method of procedure is given. M. G. Moore</p>																									
<div style="display: flex; justify-content: space-between;"> <div> <p>ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>1ST AND 2ND COVERS</p> </div> <div> <p>1ST AND 2ND COVERS</p> </div> </div>																									

CA Brodetakil, M.B.

Tanning of bottom leather with spruce extract. N. B. Brodetakil. *Lekhaya Prom.* 10, No. 9, 25-6(1950).—Dry spruce ext. previously sulfited with sulfite or bisulfite can be used for finishing chromed wetting leather. It is desirable to add 10-20% syntan AN and addn. of oak ext. can range up to 70%. To increase the strength of the outer layers, the semifinished product should be washed after tanning. Filling with molasses is essential. Details of two-stage tanning and prepn. of the tanning compd. are given. B. Z. Kamich

CA

Бродячий

Thermosettable insole leather for hot vulcanized footwear.
N. H. Brevetski, T. P. Zemzer, and I. G. Maslov. *Lezaya*
Prost. 11, No. 7, 28-9(1951).—Soaking, liming, pickling,
and chroming procedures are as usual. Three-stage vegetable
tanning is employed, with one of the following compns.:
oak 80 + AN 20, oak 80 + AN 20 + PL 20, oak 30 +
spruce 30 + AN 20 + PL 20%. Chrome content in
leather was kept at 1.5-1.7% (for 0.0 moisture). AN and
PL are syntans. B. Z. Kamich

BRODETSKIY, N.B.; KHRENNIKOV, N.S.

Ways of speeding up physical and mechanical testing of leather.
Leg.prom. [16] no.11:37-38 N '56. (MLRA 10:1)
(Leather--Testing)

BRODETSKIY, N.B.

Unified tanning methods are at variance with advanced production
requirements. Leg. prom. 18 no.2:41-42 P '58. (MIRA 11:2)
(Tanning)

BRODETSKIY, S., inzhener (g.Poltava).

Using precast reinforced concrete trusses in building apartment
houses. Gor. i sel'.stroi. no.1:13-15 Ja '57. (MIRA 10:4)
(Poltava--Girders)

BRODETSKIY, S.

Moscow workers help build TSelinograd. Na stroi.Ros. no.12:30-31
D '61. (MIRA 16:1)

1. Nachal'nik stroitel'nogo uchastka Glavnogo upravleniya po
zhilishchnomu i grazhdanskomu stroitel'stvu v g. Moskve v
TSelinograde.

(TSelinograd--Construction industry)

BRODETSKIY, S.A., Cand Tech Sci--(diss) "Study of heat and humidity processes in the ^{plantings} ~~insulation~~ of workshops with high humidity and high temperature. ²⁴ of the air." Poltava, 1958. 12 pp with drawings (Min of Higher Education USSR. Belorussian Polytech Inst im I.V.Stalin), 150 copies (KL,3-58,126)

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ANDRIYKO, M. dots., kand. tekhn. nauk; BRODETSKIY, V. [Brodets'kyi, V.],
dots., kand. tekhn. nauk; CHERNYAVSKIY, A. [Cherniavs'kyi, A.],
dots., kand. tekhn. nauk.

Make wider use of local hardwood varieties. Sil'. bud. 9 no.9:20-21
S. '59. (MIRA 12:12)
(Ukraine--Hardwoods)

BRODETSKIY, V.I.

Peru current. Priroda 53 no.7:92-94 '64.

(MIRA 17:4)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

BRODETSKIY, Ye.S.

Cost reduction of every aspect of topographic -geodetic work. Sbor.st.po
geod. no.5:53-61 '53. (MIRA 9:7)
(Geodesy) (Topographical surveying)